WHAT IS CLAIMED IS:

1. A scanning exposure apparatus which moves a mask with respect to a projection optical system while illuminating said mask on which a transfer pattern is formed and synchronously moves a photosensitive substrate with respect to said projection optical system, thereby projecting and exposing said pattern on said mask onto said substrate through said projection optical system, comprising:

a base for holding remaining constituent elements;

a scanning stage moved, with respect to said base, along a first direction corresponding to a moving direction of said mask and said substrate;

a fine adjustment stage, arranged to be freely moved within predetermined ranges in the first direction and in a second direction perpendicular to the first direction with respect to said scanning stage, for mounting one of said mask and said substrate thereon;

a first electromagnetic actuator for driving said fine adjustment stage in the second direction with respect to said scanning stage; and

a second electromagnetic actuator for driving said fine adjustment stage in the first direction with respect to said scanning direction, and generating a larger thrust than that of said first actuator upon

reception of the same input as that to said first actuator.

2. An apparatus according to claim 1, wherein said fine adjustment stage mounts said mask thereon, and further comprising a substrate stage for mounting said substrate thereon.

3. An apparatus according to claim 1, wherein said fine adjustment stage mounts said substrate thereon, and further comprising a mask stage for mounting said mask thereon.

4. An apparatus according to claim 1, wherein said first actuator is of a moving magnet type, and a stationary member having a coil of said first actuator is fixed to said scanning stage.

5. An apparatus according to claim 1, wherein said second actuator is of a moving magnet type, and a stationary member having a coil of said second actuator is fixed to said scanning stage.

6. An apparatus according to claim 4, further comprising a cooling unit for cooling said stationary member of said first actuator by circulating a cooling fluid.

7. An apparatus according to claim 5, further comprising a cooling unit for cooling said stationary member of said second actuator by circulating a cooling fluid.

8. An apparatus according to claim 6, further comprising

a movable mirror fixed on said fine adjustment stage, and

an interferometer for irradiating a measurement light beam on said movable mirror to detect a displacement of said fine adjustment stage with respect to said scanning stage, and

wherein said cooling unit circulates said cooling fluid from a portion near an optical path of the light beam from said interferometer toward a distant portion.

9. An apparatus according to claim 7, further comprising:

a movable mirror fixed on said fine adjustment stage, and

an interferometer for irradiating a measurement light beam on said movable mirror to detect a displacement of said fine adjustment stage with respect to said scanning stage, and

wherein said cooling unit circulates said cooling fluid from a portion near an optical path of the light beam from said interferometer toward a distant portion.

10. An apparatus according to claim 1, wherein at least one of said first and second actuators is constituted by a pair of subactuators which are parallelly arranged.

11. A scanning exposure apparatus which moves a mask with respect to a projection optical system while illuminating said mask on which a transfer pattern is formed and synchronously moves a photosensitive substrate with respect to said projection optical system, thereby projecting and exposing said pattern on said mask onto said substrate through said projection optical system, comprising:

a base for holding remaining constituent elements;

a moving table for mounting one of said mask and said substrate and moving one of said mask and said substrate with respect to said base;

a driving unit for driving said moving table with respect to said base;

a switch for stopping an operation of said driving unit when said moving table moves beyond an allowable movement range for allowing movement of said moving table with respect to said base; and

a push-back portion for generating a biasing force for pushing back said moving table to the allowable movement range side at a timing before said switch operates.

12. An apparatus according to claim 11, wherein said push-back portion has an elastic member.

13. An apparatus according to claim 11, wherein said switch has a switch main body and a sliding

portion sliding with respect to said switch main body.

14. An apparatus according to claim 11, wherein said switch has a switch main body and a rotating portion rotating with respect to said switch main body.

15. An apparatus according to claim 11, wherein said driving unit has a linear motor.

16. A drive table which is two-dimensionally driven, comprising:

a base for holding remaining constituent elements;

a table for mounting an object thereon;

a driving system for two-dimensionally driving said table, with respect to said base, along a plane on which an X-Y reference coordinate system is set, said X-Y reference coordinate system being fixed to said base;

a position detection unit for detecting a position of said table;

a reference position detection unit for generating a detection signal when a predetermined point on said table reaches a predetermined reference position on said X-Y reference coordinate system; and

a calculation unit for converting a detection value from said position detection unit into a coordinate value in said X-Y reference coordinate system in accordance with the detection signal obtained from said reference position detection unit and a

detection value from said position detection unit, which is obtained upon generation of the detection signal.

17. A table according to claim 16, wherein said position detection unit detects a position in an X direction, said reference position detection unit detects a reference position with respect to the X direction, and said calculation unit calculates a coordinate value in the X direction.

18. A table according to claim 16, wherein said position detection unit detects a position in a Y direction, said reference position detection unit detects a reference position with respect to the Y direction, and said calculation unit calculates a coordinate value in the Y direction.

19. A table according to claim 16, said position detection unit detects a rotation amount about a θ axis perpendicular to X and Y axes, and said reference position detection unit detects a reference position with respect to a rotation about said θ axis.

20. A table according to claim 16, wherein said driving system is of a non-contact type.

21. A table according to claim 16, wherein said reference position detection unit has a light-shielding plate arranged at a predetermined position on said table, and a reference position detection sensor for

generating the detection signal when said light-shielding plate reaches the predetermined reference position.

22. A table according to claim 21, wherein said reference position detection sensor comprises at least two reference position detection sensors, and said calculation unit obtains a reference rotation amount about a θ axis from a shift between timings of detection signals generated from said two reference position detection sensors.

23. A table according to claim 16, wherein said reference position detection unit comprises

a reference stopper fixed with respect to said X-Y reference coordinate system,

a driving portion for pressing a side surface of said table against said reference stopper, and

a press detection portion for detecting that said side surface of said table is pressed against said reference stopper.